

Message Text

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TAGS: TGEN, US, UR

SUBJECT:US-USSR S&T AGREEMENT: SIXTH JCM: JWG REPORT ON
CHEMICAL CATALYSIS (01.02)

1. PLEASE TRANSMIT FOLLOWING DRAFT JOINT WORKING GROUP
REPORT ON CHEMICAL CATALYSIS TO BORESKOV AND AYKAZYAN.

2. REPORT TO THE SIXTH MEETING OF THE JOINT US-USSR
COMMISSION ON SCIENTIFIC AND TECHNICAL COOPERATION BY
THE JOINT WORKING GROUP ON CHEMICAL CATALYSIS

I. ESTABLISHMENT

AFTER RECIPROCAL MEETINGS IN THE US AND THE USSR IN
SEPTEMBER 1972 AT WHICH TOPICS FOR COOPERATION WERE
WORKED OUT, THE JOINT COMMISSION APPROVED THE ESTABLISH-
MENT OF THE WORKING GROUP AND THE PROGRAM.

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II. PROJECTS: THE CURRENTLY APPROVED TOPICS ARE:

--01.0202 - CATALYTIC REACTOR MODELING (PROJECT 2)
--01.0206 - HOMOGENEOUS CATALYSIS BY ORGANOMETALLIC
METHODS (PROJECT 1)
--01.0207 - CHARACTERIZATION OF CATALYTIC MATERIALS
BY PHYSICAL METHODS (PROJECT 3)

--01.0208 - DEVELOPMENT OF CATALYTIC SYSTEMS OF APPLIED INTEREST (PROJECT 4)

III. ACCOMPLISHMENTS

THE MAJOR EVENT OF THE YEAR WAS THE ANNUAL SYMPOSIUM, HELD MAY 14 TO MAY 20 IN BAKU, USSR AFTER WHICH THE US DELEGATION VISITED LABORATORIES IN BAKU, ALMA-ATA, NOVOSIBIRSK, MOSCOW AND LENINGRAD. TWENTY-SEVEN AMERICANS AND 59 SOVIETS PARTICIPATED.

AT THE MEETING OF THE JOINT WORKING GROUP, ASSOCIATED WITH THE SYMPOSIUM, IT WAS AGREED THAT THE TITLES OF THREE OF THE TOPICS SHOULD BE CHANGED AS FOLLOWS:

--01.0202 - CATALYTIC REACTION ENGINEERING
--01.0207 - FUNDAMENTAL ASPECTS OF CATALYSIS
--01.0208 - DEVELOPMENT AND STUDY OF CATALYTIC REACTIONS OF APPLIED INTEREST

IT WAS ALSO AGREED THAT IF INTERNATIONAL OR NATIONAL SCIENTIFIC MEETINGS IN THE FIELD OF INTEREST OF VISITING SCIENTISTS ARE HELD, THE RECEIVING SIDE WILL ENCOURAGE PARTICIPATION AND WILL PAY REGISTRATION FEES. FINALLY, CURRENT ADMINISTRATIVE PROCEDURES WERE ADOPTED WHICH UNCLASSIFIED

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PROVIDE FOR EXCHANGES ON A NON-CURRENCY EXCHANGE BASIS FOR UP TO 90 MAN MONTHS PER YEAR FROM EACH SIDE, INCLUDING RESEARCH FELLOWS FOR PERIODS UP TO 8 MONTHS DURATION, VISITS BY PROJECT COORDINATORS AND PRINCIPAL INVESTIGATORS, AND DELEGATIONS TO ONE SYMPOSIUM. THE SOVIET SIDE PROPOSED, AND THE US SIDE IS STUDYING A CHANGE IN PER DIEM RATES.

AT A SEPARATE MEETING FOLLOWING THE BAKU SYMPOSIUM, THE TWO SIDES AGREED TO A PLAN OF WORK FOR THE HOMOGENEOUS CATALYSIS PROJECT WHICH HAD BEEN INACTIVE. AN INITIAL EXCHANGE OF RESEARCH FELLOWS WILL TAKE PLACE BETWEEN COLORADO STATE UNIVERSITY AND THE INSTITUTE OF CHEMICAL PHYSICS IN MOSCOW. THE PROGRAM WILL BE EXPANDED LATER TO INCLUDE OTHER INSTITUTIONS ON BOTH SIDES.

COOPERATION RELATING TO THE THREE ACTIVE TOPICS DURING THE YEAR IS SUMMARIZED BELOW:

PROJECT 2 - ENGINEERING PROBLEMS OF CATALYSIS:

THE SCIENTIFIC COOPERATION DEVELOPED IN THE FOLLOWING

SUB-TOPICS:

1. REACTION KINETICS OF HETEROGENEOUS CATALYSIS
2. SIMULATION OF PROCESSES IN FLUIDIZED BED
3. SIMULATION OF POLYMERIZATION PROCESSES

THE PROJECT COORDINATORS NOTED THE IMPORTANCE OF FURTHER COOPERATION IN THE FOLLOWING DIRECTIONS:

1. INVESTIGATION OF COMPLEX CATALYTIC REACTION KINETICS
 2. MATHEMATICAL SIMULATION OF PROCESSES IN FLUIDIZED BED
 3. SIMULATION OF PROCESSES WITH CHANGING CATALYST PROPERTIES FOR PARTIAL OXIDATION OF HYDROCARBONS
 4. MATHEMATICAL SIMULATION OF THE POLYMERIZATION PROCESSES.
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FOUR SOVIET AND FOUR AMERICAN SCIENTISTS AND THEIR RESPECTIVE INSTITUTIONS WILL BE INVOLVED IN CARRYING OUT PROPOSED RESEARCH FOR THE COMING YEAR.

PROJECT 3 - FUNDAMENTAL ASPECTS OF CATALYSIS:

A LARGER NUMBER OF RESEARCH FELLOW EXCHANGES IS PLANNED UNDER THE FOLLOWING SPECIFIC SUB-TOPICS:

1. SUPPORTED METAL CATALYSTS AND CATALYTIC HYDROGENATION
2. CHEMICAL PHYSICS OF PROCESSES ON METAL SURFACES
3. CATALYSIS BY OXIDES AND SULFIDES
4. ACID-BASE CATALYSIS

NINE SOVIET SCIENTISTS FROM FOUR SOVIET INSTITUTES AND SEVEN US SCIENTISTS FROM SIX US UNIVERSITY LABORATORIES AND ONE INDUSTRY RESEARCH LABORATORY ARE COOPERATING IN CARRYING OUT RESEARCH IN THE ABOVE SUB-TOPICS.

PROJECT 4 - DEVELOPMENT AND STUDY OF CATALYTIC REACTIONS OF APPLIED INTEREST:

FOUR SOVIET AND FOUR US SCIENTISTS AND THEIR RESPECTIVE INSTITUTIONS HAVE BEEN INVOLVED.

THE FOLLOWING SUB-TOPICS HAVE BEEN JOINTLY APPROVED FOR FUTURE COOPERATIVE EFFORT:

1. DEHYDROCYCLIZATION OF HYDROCARBONS ON SUPPORTED CATALYSTS
 2. STUDY ON RH AND RU-CATALYSTS ON REACTIONS OF CO H₂, H₂ NO
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3. CATALYSIS, MECHANISM AND REACTION KINETICS OF SYNTHESIS OF ETHYLENE-GLYCOL, GLYCERIN AND OTHER COMPOUNDS FROM NON-PETROLEUM RAW MATERIALS
4. CATALYTIC DISPROPORTIONATION OF OLEFINS ON SUPPORTED RE-CATALYSTS
5. (A) COMPARATIVE STUDY OF THE KINETICS AND MECHANISM OF PROPYLENE OXIDATION ON BISMUTH MOLYBDATES
---(B) STUDY OF PROPYLENE AND BUTENE OXIDATION ON SOLID SOLUTION CATALYSTS
6. COMPARISON OF LIQUID AND GAS PHASE OXIDATION AND EPOXIDATION OF OLEFINS
7. STUDIES OF HYDROGENATION REACTIONS ON THE MEMBRANE CATALYSTS
8. IR-STUDY OF HYDROCARBON OXIDATION ON SUPPORTED METALS

SIX US SCIENTISTS FROM 6 PARTICIPATING UNIVERSITIES AND SEVEN SOVIET SCIENTISTS FROM FOUR SOVIET PARTICIPATING INSTITUTES WILL BE INVOLVED IN CARRYING OUT THIS PLANNED RESEARCH.

IV. SUMMARY

IN VIEW OF THE DYNAMIC NATURE OF THE AREA OF CATALYSIS, CHANGES IN DIRECTIONS OF VARIOUS INVESTIGATIONS HAVE BEEN AGREED UPON AND WILL BE IMPLEMENTED IN THE OPERATION DURING THE NEXT YEAR. BOTH SIDES HAVE AGREED UPON THE CHANGES OF THE DIRECTION OF WORK AND HAVE SELECTED SCIENTISTS AND LABORATORIES THAT WILL PARTICIPATE IN THE ACTIVITIES OF THE PROGRAM. AS A RESULT OF THE EFFORTS OF BOTH SIDES, COOPERATION IN THE AREA OF HOMOGENEOUS CATALYSIS WILL BE RESUMED.

V. RECOMMENDATIONS

1. THAT THE JOINT COMMISSION CONCUR IN THE AGREEMENT

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OF THE JOINT WORKING GROUP THAT VISITING SCIENTISTS WILL BE ENCOURAGED BY THE RECEIVING COUNTRY TO PARTICIPATE IN PUBLIC SCIENTIFIC LECTURES AND MEETINGS IN NATIONAL AND INTERNATIONAL SYMPOSIUMS AND MEETINGS IN FIELDS OF THEIR SCIENTIFIC SPECIALIZATION WHICH OCCUR DURING THEIR STAY IN THE HOST COUNTRY, WITH THE CONCURRENCE OF THE PROJECT COORDINATOR OF THE HOST COUNTRY,

AND THAT THE HOST COUNTRY WILL BEAR THE COST OF THE
REGISTRATION FEES OF SUCH MEETINGS.

2. RESEARCH FELLOWS SHOULD BE ALLOWED TO HAVE DIRECT
CONTACT WITH PRINCIPAL INVESTIGATORS OR PROJECT
COORDINATORS ON A REGULAR BASIS IN ORDER TO PERMIT

BETTER SUPERVISION AND MAXIMIZE THE MUTUAL BENEFIT TO
THE PARTICIPANTS.

3. THE SPECIFIC AREAS OF RESEARCH FOR EACH RESEARCH FELLOW
SHOULD BE AGREED UPON BETWEEN US AND SOVIET PRINCIPAL
INVESTIGATORS OR PROJECT COORDINATORS PRIOR TO DEPARTURE
OF THE FELLOW FROM HIS BASE INSTITUTION. THE AGREED UPON
PROGRAM MUST BE STRICTLY ADHERED TO. ANY CHANGES THAT
APPEAR NECESSARY MUST BE AGREED UPON BY THE PRINCIPAL
INVESTIGATORS ON BOTH SIDES.

3. CORRECTION TO SECTION I. ADD WORDS QUOTE IN MARCH
1973 END QUOTE AFTER QUOTE THE JOINT COMMISSION END
QUOTE.

4. CORRECTION TO SECTION III, THIRD PARAGRAPH. REPLACE
WORD QUOTE PAY END QUOTE IN FOURTH LINE WITH WORDS QUOTE
BEAR THE COST OF THE END QUOTE. VANCE

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